Title

The Role of Tilt in Face Gaze Behavior

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The role of *tilt* in face perception and gaze behavior

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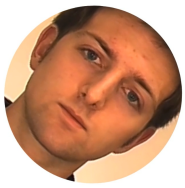
INTRODUCTION

The **left-gaze bias (LGB)** is a tendency to fixate the left side of the face (from the observer's perspective).

Campbell (1978);
Guo et al., (2009);
(and many others)

Previous research only examined the LGB in upright or inverted faces.
Q: What happens when faces are *tilted*?



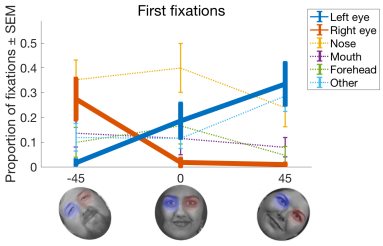
?

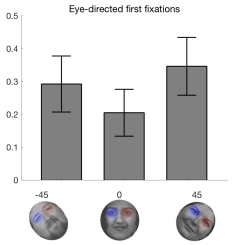
We hypothesized that the **salience of the upper eye** in tilted faces would compete with the LGB, and lead to an **upper eye bias**.

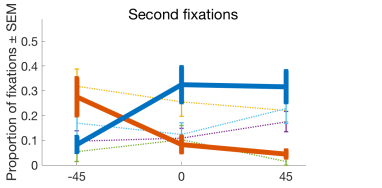
EXPERIMENT 1

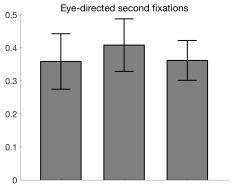
- Participants (n=15) completed an expression recognition task with faces appearing at: **-45° 0° or +45°**
- Eye movements were tracked at 60Hz with a GazePoint tracker.
- Independent coders marked the locations of the first two fixations.

Results







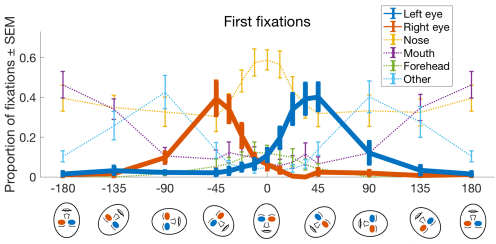


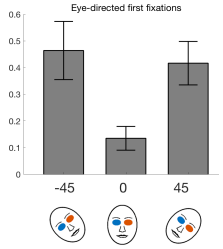
Davidenko, Kopalle, & Bridgeman (Perception, 2019)

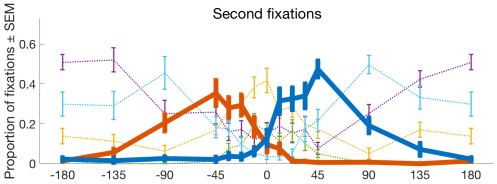
EXPERIMENT 2

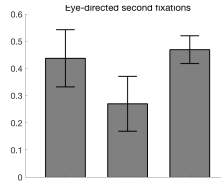
- Participants (n=13) completed a similar task with faces appearing at: **±180° ±135° ±90° ±45° ±33.75° ±22.5° ±11.25° or 0°**
- Same eye tracking and coding as in Exp. 1

Results







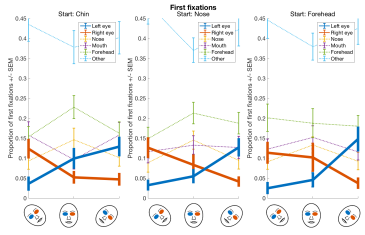


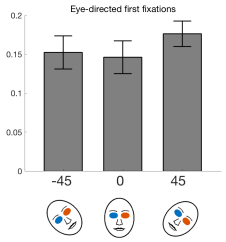
Davidenko, Kopalle, & Bridgeman (Perception, 2019)

EXPERIMENT 3

- Participants (n=20) completed an expression recognition task similar to Exp. 2, with faces appearing at: **-45° 0° or +45°**
- **Vertical position of face varied randomly**, such that the initial fixation was on the chin, nose, or forehead.

Results



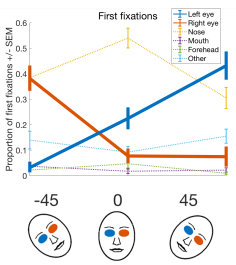


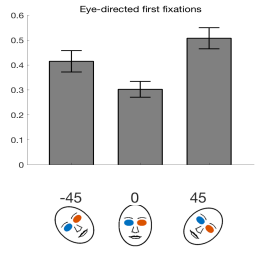
Davidenko, Sweeney, Cardilla, & Akhtar (in preparation)

EXPERIMENT 4

- Participants (same n=20 as in Exp. 3) completed an expression rating task with **short videos** (~1 second) of faces making dynamic expressions at: **-45° 0° or +45°**

Results





Davidenko, Sweeney, Cardilla, & Akhtar (in preparation)

CONCLUSIONS

Tilted faces elicit a **robust upper eye bias** that dominates the LGB at 45 degrees.

Tilted faces elicit **more eye-directed fixations** than upright faces, but **no change in behavior**.

Fixating the upper eye of tilted faces may be **optimal** for cortical processing (*de Haas et al., 2016*).